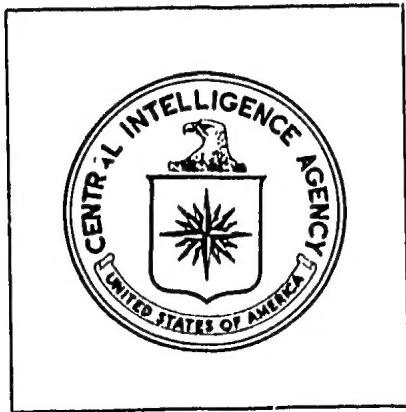


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Israel: The Importance of Sinai Oil

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ISRAEL: THE IMPORTANCE OF SINAI OIL

CONCLUSIONS

1. Israel pumped 100,000 barrels per day (b/d) of crude from the Sinai oilfields in 1974, which was 70% of its daily petroleum consumption. Tel Aviv's remaining consumption was met by crude oil imports from Iran. Sinai oil has been a boon to Israel because of the rapid rise in the cost of imported oil. All of the increase in Israeli oil consumption in the past few years came from stepped-up production from Sinai.

2. The major foreign exchange cost to Israel of Sinai oil is the setting aside of payments to an Italian firm that has an interest in the oilfields. That payment, together with other minor foreign exchange costs, totals less than \$100 million. At current world prices, an equal volume of crude from Iran would cost about US \$400 million.

3. Israel has taken a short-run view in administering the oilfields in Sinai in recent years. It has concentrated on reworking the Egyptian fields to maximize production rather than finding new oil supplies in the area. This approach reflects:

- the vulnerability of the fields to Egyptian attack,
- limits on the long-run potential of the oilfields themselves, and
- the possible negotiation of a reversion of the fields to Egypt.

4. Finding a new source of crude to replace Sinai oil should not prove difficult – Iran can supply the oil and the Shah has indicated a willingness to do so. But, with foreign exchange reserves in short supply, Israel would have to cut other imports to accommodate a \$340 million rise in its foreign oil bill, unless compensatory US aid were available.

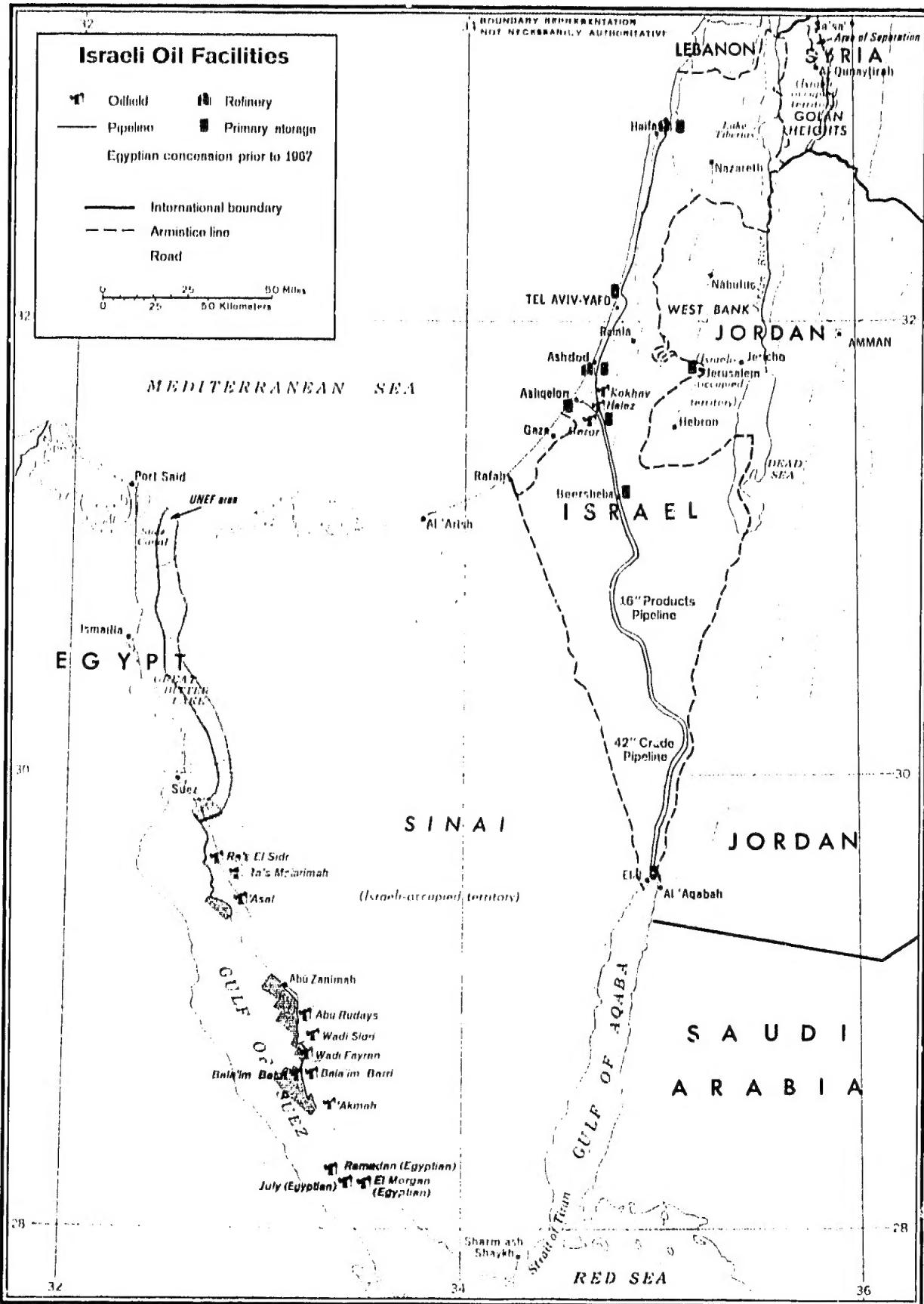
DISCUSSION

The Setting

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5. The capture of the Sinai oilfields from Egypt in the 1967 war added considerably to Israeli oil resources. Prior to that war, Israel had been meeting

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nearly all its 60,000 b/d fuel requirement from imported Iranian oil. The only sources of domestic crude were the Helez, Beror, and Kokhav fields, south of Ashdod, which contributed less than 10% of the country's oil needs. Israel's oil reserves in 1966 amounted to only 10 million barrels of oil, about one-half a year's consumption.

6. The Gulf of Suez held nearly all Egypt's 2 billion barrels of proved oil reserves at the time of the 1967 war and was the most promising area for new discoveries. About 80% of Egypt's reserves were located offshore. The Sinai fields contained most of the remaining crude deposits. Of the 450 million barrels of reserves captured by the Israelis, only 125 million barrels consisted of better quality offshore crude. The older onshore fields in the Sinai produced low-quality oil, not readily marketable abroad.



Oil wells at Abu Rudays

7. Egyptian production from the more than 100 Sinai wells in 1966 was 90,000 b/d. As shown below, 90% of the daily flow of oil came from the Bala'im fields.

Field	Production (b/d)
Total	89,200
Bala'im (onshore)	43,000
Bala'im (offshore)	38,000
Abu Rudays	2,500
Sidri	1,200
Fayran	300
'Akmah	200
'Asal	2,100
Sidr	1,700
Matarimah	200

8. The Israelis were slow in restoring output of the oilfields: in 1970 only 45,000 b/d was being pumped from Sinai, compared with an average 40,000 b/d take by the Israelis during the last half of 1967. This reflected

- the need to replace damaged oilfield equipment,
- shortages of Israeli technicians and expertise in oilfield operations,
- a limited value of inferior quality crude, and
- a hesitation to make major investments to develop output more fully while there was uncertainty over the fields' future status.

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Most important, there was no easy way to get the oil to Israel's refineries. Whether coming from Iran or the Sinai, oil had to be transported to Elat, then on to Haifa by a 16-inch pipeline. Until a larger pipeline went into operation in 1970, throughput capacity was limited to 110,000 b/d of oil. Israel would have had to cut back on imports of better quality Iranian crude to accommodate more Sinai oil. Moreover, so long as prices were low, the balance-of-payments gain from substitute Sinai oil was small.

9. Political uncertainties ruled out a large Israeli exploration program in Sinai following the 1967 war. Modest efforts to determine the availability of better quality crude offshore in the Gulf of Suez were terminated when a drilling rig en route to the area was sabotaged by Egypt. Since then, Israel has confined its activities to reworking the former Egyptian fields and drilling a few new wells at Bala'im. At the present rate of extraction, the fields will be exhausted in 5 to 7 years.

The Israeli Petroleum Industry

10. The bottlenecks to greater utilization of oil from the Sinai were overcome with the completion in 1970 of a new 42-inch, 400,000 b/d pipeline from Elat to Ashqelon. Designed primarily for moving Iranian crude oil to European customers, the pipeline also provided for the movement of crude to the Haifa refinery.

11. A second phase of pipeline construction boosted throughput to 800,000 b/d in 1973 - the current rated capacity. Israel also expanded other oil industry activities, and by 1974 the oceangoing tanker fleet owned or chartered by Israel totaled about 4 million deadweight tons (DWT), compared with 690,000 DWT in 1970. The fleet now includes 6 supertankers of more than 250,000 DWT capacity.

12. Israel boosted its refining capacity to take advantage of increased flows of oil through Israel. Since 1970, capacity of the Haifa refinery has risen by about one-fourth to 140,000 b/d, and a second 70,000-b/d refinery has been built at Ashdod.

13. Construction of petroleum storage kept pace with other oil infrastructure buildup. Israel has aboveground steel tankage for more than one-half year's needs

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at the 1974 consumption rate of 140,000 b/d.¹ Additional storage is available at small terminals for military and civil use.

Supply and Use of Petroleum

14. With an enlarged pipeline capacity and expanded facilities to process and handle crude oil, Israel intensified exploitation of the Sinai fields after 1970, and as a result output rose dramatically. As shown in Table 1, Israel has met all the increase in its oil consumption in the last four years from Sinai. Israel pumped an average 100,000 b/d of oil from the former Egyptian fields in 1974. Oil from the Sinai together with 80,000 b/d the government bought from Iran in 1974 was 130% of Israel's oil needs.

Table 1
Petroleum Supply and Demand¹

	Thousand b/d	
	1970	1974
Supply	125	180
Sinai	45	100
Iran	80	80
Israel proper	Negl.	Negl.
Less consumption	90	140
Exports to occupied territories	2	10
Available for export to rest of world and addition to stocks	33	30

1. Consumption in the territories is treated separately because: (1) that is the way Israel treats it in its own balance of payments, petroleum consumption tables, and other accounts; and (2) a negotiated settlement inclusive of returning the Gaza Strip and West Bank to Arab control or the grant of autonomy would lessen Israel's oil consumption accordingly.

15. Petroleum use grew an average rate of 12% a year during 1971-74. Heavy fuel oil and crude, for which the power stations were the main customers, accounted for about half of the country's consumption, and gasoil and gasoline took another 30%.

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the high degree of readiness currently being maintained and the large number of exercises held by the Israeli Defense Forces since the war suggest oil use has remained high.

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19. The tabulation below illustrates the financial cost to Israel of losing Sinai oil. It shows 1974 consumption at \$1.80 per barrel (the estimated foreign exchange cost) for Sinai oil and \$11.04 for Iranian oil (the price the government says it is now paying).

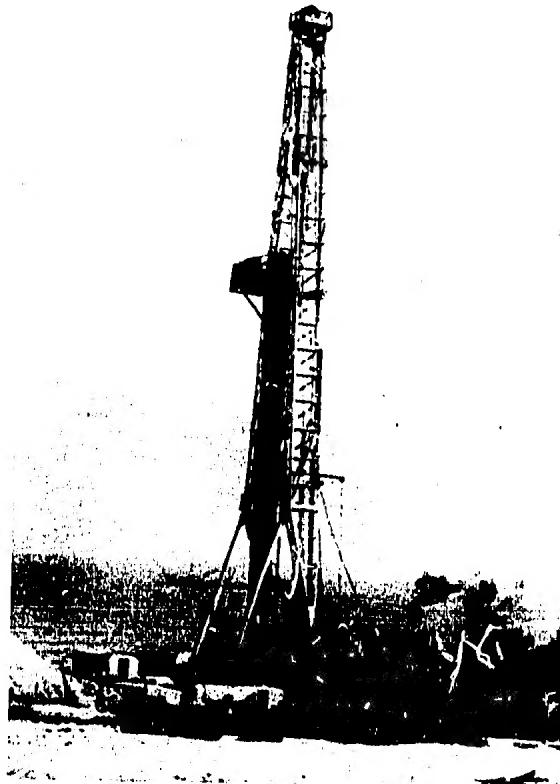
2. Excluding oil use in East Jerusalem, which is incorporated in statistics for Israel. Actual petroleum consumption in the territories is higher than indicated here because some oil burned in Israeli electric powerplants is distributed in the territories.

	<u>Million \$</u>	
	<u>With Sinai</u>	<u>Without Sinai</u>
Net cost to Israel		
Sinai (100,000 b/d)	225	565
Iran (40,000 b/d)	65	
Difference	160}	565
		340

21. Over the longer term, Israel would have to increase imports of foreign oil. The prospects for discovering additional oil in Israel are not good: the greatest promise lies offshore in the Mediterranean. Exploratory drilling has been under way in the West Bank and Gaza Strip for the past year. No new oil has yet been found. Recent press reports of sizable oil reserves under the West Bank are premature. Claims of possibly 7 billion barrels of oil near Ramailah north of Jerusalem by oil firm officials are based on core samples from a reworked well originally drilled in 1958 and on which more work (and financing) is needed.

22. Imported oil to make up for loss of Sinai supplies is available. Recent statements by the Shah notwithstanding, there is no evidence he intends to sacrifice his long-established ties with Tel Aviv. Moreover, substantial tonnages of Iranian crude move through the Elat-Ashqelon pipeline for Europe. Israel will continue to offer Iran advantageous prices on this oil even if the Suez Canal reopens and a trans-Egypt pipeline is built.

23. As Egypt's oilfields in the Gulf of Suez develop and a growing volume of crude becomes available for export, Sadat, as part of a Sinai settlement, might approve an indirect sale of Sinai or Suez oil to Israel through one of its foreign partners. Barring an understanding with either the Shah or Sadat, Tel Aviv would have to resort to spot oil purchases, the most costly alternative.



Exploratory drilling in the Gaza Strip

APPENDIX

A NOTE ON CUMULATIVE COSTS OF SINAI OIL

Statements by Egyptian President Sadat place the total value of crude pumped from Sinai since the Israeli occupation at \$2.2 billion. That sum implies a valuation of about \$10 per barrel for the average 75,000 b/d of oil Israel has pumped from the fields since 1967. If Egypt had had control of the fields and the same volume of oil had been pumped, it could have sold for only \$700 million during the 1967-74 period.

However, with the Suez Canal closed, Egypt would have had difficulty marketing its crude. Oil from Egypt's offshore El Morgan field, adjacent to the Sinai fields, was selling for about \$1 a barrel during much of the inter-war period. The distance by tanker from the Gulf of Suez — by sea around Africa to Europe — is longer than the same voyage from the Persian Gulf. Moreover, Sinai oil would have been difficult to market because of its poor quality. At a price of \$1 per barrel rather than the \$2 per barrel that Israel used as an accounting figure for 1967 through 1973, the cumulative value of Sinai oil would have been closer to \$500 million for 1967-74.